

Amendments to the Claims

Claims 1 and 4 are amended as set out below.

Claims 8 and 9 are amended to correct errors in syntax.

The following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1 (currently amended). A short circuit detector for a fieldbus network, said network comprising a positive lead, a negative lead, [[and]] a shield conductor connected to ground, control circuitry propagating a digital signal on at least one of said positive lead and said negative lead, and power circuitry transmitting power on at least one of said positive lead and said negative lead, said short circuit detector comprising:

- a) a first high impedance semiconductor circuit coupled between said positive lead and said shield conductor and having a first output;
- b) a second high impedance semiconductor circuit coupled between said negative lead and said shield conductor and having a second output; and
- c) an alarm circuit coupled to said first and second outputs for activating an alarm whenever a short circuit exists between either of said positive or negative leads and said shield conductor.

2 (original). The short circuit detector of claim 1 wherein said alarm circuit includes a ground connection which is isolated from shield conductor.

3 (original). The short circuit detector of claim 2 wherein the alarm circuit includes an opto-isolator device.

4 (currently amended). A short circuit detector for a fieldbus network, said network comprising a positive lead, a negative lead, [[and]] a shield conductor connected to ground, control circuitry propagating a digital signal on at least one of said positive lead and said negative lead, and power circuitry transmitting power on at least one of said positive lead and said negative lead, said short circuit detector comprising a first high impedance alarm circuit coupled between said positive lead and said shield conductor and a second high impedance alarm circuit coupled between said negative lead and said shield conductor.

5 (original). The short circuit detector of claim 4 wherein said first and second high impedance alarm circuits each comprise a constant current diode connected in series with an alarm indicator device.

6 (original). The short circuit detector of claim 5 wherein said alarm indicator device is a light emitting diode.

7 (original). The short circuit detector of claim 1 wherein each of the first and second high impedance semiconductor circuits have a visual indicator device for identifying whether a short circuit has occurred in either the positive or the negative lead.

8 (currently amended). The short circuit detector of claim 1 wherein each of the first and second high impedance semiconductor circuits includes a zener diode for blocking current except in a short circuit condition.

9 (currently amended). The short circuit detector of claim 8 wherein each of the first and second high impedance semiconductor circuits includes a semiconductor device coupled to an opto-isolator device.

10 (original). The short circuit detector of claim 9 wherein each opto-isolator device is coupled to an alarm circuit.